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APHORISMS

ON THE

APPLICATION AND USE

OF THE

FORCEPS AND VECTIS;

ON PRETERNATURAL LABOURS;

ON LABOURS ATTENDED WITH HEMORRHAGE,

AND WITH CONVULSIONS.

FIFTH EDITION.

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ARRANGEMENT OF LABOURS.

FOUR CLASSES.

I. NATURAL.
II. DIFFICULT.
III. PRETERNATURAL.
IV. ANOMALOUS, or COMPLEX.

CLASS I. NATURAL LABOURS.

CHARACTER. Every labour in which the process is completed within twenty-four hours, the head of the child presenting, and no adventitious assistance being required.

VARIETIES.

1. The face inclined towards the *sacrum*.
2. The face inclined towards the *ossa pubis*.

3. The head presenting with one or both arms.
4. The face presenting.

That part of a child which descends lowest into the *pelvis*, is to be esteemed the presenting part.

Circumstances attending Labours.

1. Anxiety.
2. Rigours.
3. Strangury.
4. Diarrhœa.
5. Mucous discharge, with or without a mixture of blood.
6. Pain.

Causes of pain.

1. Expulsatory action of the *uterus*.
2. Resistance made to the effect of that action.

Distinctions of pain.

1. True.
2. False.

Causes and signs of false pain.

Means of removing them.

Means by which true pains are supposed to be regulated, and their effect promoted.

NOTE. The pains attending labour are subsequent to the action of the *uterus*, though in common language the word *pain*, and the action of the *uterus*, are used synonymously.

Progress of natural labours.

Three periods or stages.

1st period.

Dilatation of the *os uteri*.

Rupture of the membranes.

Discharge of the waters.

2d period.

Descent of the child.

Dilatation of the external parts.

Expulsion of the child.

3d period.

Separation of the *placenta*.

Expulsion or extraction of the *placenta*.

NOTE. It very often happens that the membranes do not break till the head of the child is on the point of being expelled. This

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is the natural and most desirable progress of a labour, and it is a negative proof that the labour has been well conducted; that is, not interrupted. But the description given above, will answer the purpose of impressing a clear, general idea of labours.

The two circumstances which principally require attention in natural labours are, to guard the *perinæum* and to extract the *placenta* with discretion.

Class II. Difficult Labours.

Character. Every labour in which the process is prolonged beyond twenty-four hours, the head of the child presenting.

Note. Some objections may be made to this definition taken from time, but it will be found to apply to practical uses better than if it was taken from circumstances.

It would often be extremely difficult to say with precision when a labour actually begins, because

because of the number of concurrent changes. But in general some progress must be made before we can allow a labour to be commenced.

FOUR ORDERS.

ORDER I.

Labours rendered difficult from the inert or irregular action of the uterus.

CAUSES.

1. Too great distention of the *uterus.*
2. Partial action of the *uterus.*
3. Rigidity of the membranes.
4. Imperfect discharge or dribbling of the waters.
5. Shortness of the *funis umbilicalis.*
6. Weakness of the constitution.
7. Fever.
8. Want of a due degree of irritability.
9. Passions of the mind.
10. General deformity.

ORDER II.

Labours rendered difficult by the rigidity of the parts to be dilated.

1. First child.
2. Advancement in age.
3. Too early rupture of the membranes.
4. Oblique position of the *os uteri*.
5. Fever or local inflammation.
6. Extreme rigidity of the *os uteri*.
7. Uncommon rigidity of the external parts.

ORDER III.

Labours rendered difficult from disproportion between the dimensions of the cavity of the pelvis and the head of the child.

1. Original smallness of the *pelvis*.
2. Distortion of the *pelvis*.
3. Head of the child unusually large, or too much ossified.
4. Head of the child enlarged by disease.
5. Face inclined towards the *ossa pubis*.

6. Presentation

6. Presentation of the face.
7. Head presenting with one or both arms.

ORDER IV.

Labours rendered difficult by diseases of the soft parts.

1. Suppression of urine.
2. Stone in the bladder.
3. Excrescences of the *os uteri.*
4. Cicatrices in the *vagina.*
5. Adhesion of the *vagina.*
6. Steatomatose tumours.
7. Enlargement of the *ovaria.*
8. Rupture of the *uterus.*

NOTE. The disturbance of the natural progress of labours, more especially the premature rupture of the membranes, is the most general cause of difficulties in parturition.

Women are to be relieved in difficult labours,

1. By time and patience.
2. By encouragement to hope for a happy event.

3. By

3. By regulating their general conduct.
4. By lessening or removing the obstacles to the effects which should be produced by the pains.
5. By the assistance of instruments.

Intentions in the use of instruments.

1. To preserve the lives both of the mother and child.
2. To preserve the life of the mother.
3. To preserve the life of the child.

Instruments contrived to answer the first intention.

1. Fillets. 2. *Forceps.* 3. *Vectis.*

Three things are to be considered with respect to the *Forceps* or *Vectis*, and to the use of instruments in general.

1. To make an accurate distinction of those cases which require their use.
2. Of those cases which allow their use.
3. Of the manner in which they ought to be used.

We are in the first place to speak of the application and use of the *forceps.*

Directions

Directions for, and admonitions in, the application and use of the Forceps.

SECTION I.

1. It has long been established as a general rule, that instruments are never to be used in the practice of midwifery; the cases in which they are used are therefore to be considered merely as exceptions to this rule.

2. But such cases can very seldom occur in the practice of any one person; and when they do happen, neither the *forceps* nor any other instrument is ever to be used in a clandestine manner.

3. The first stage of a labour must be completed, that is, the *os uteri* must be dilated and the membranes broken, before we think of applying the *forceps*.

4. The intention in the use of the *forceps* is, to preserve the lives both of the mother and child, but the necessity for using them must be decided by the circumstances of the mother only.

5. It

5. It is meant, when the *forceps* are used, to supply with them the insufficiency or want of labour pains; but so long as the pains continue, we have reason to hope they will produce their effect, and shall be justified in waiting.

6. Nor doth the cessation of the pains always prove the necessity of using the *forceps*, as there may be a total or a temporary cessation of the pains.

7. In the former, the pulse, the countenance, and the general appearances of the patient indicate extreme debility, and resemble those of a person worn out with disease or fatigue.

8. But in the latter there are no alarming symptoms, and the patient often enjoys short intervals of refreshing sleep.

9. A rule for the time of applying the *forceps* has been formed from the following circumstance; that, after the cessation of the pains, the head of the child should have rested for six hours in such a situation as to allow the use of the *forceps* before they are used.

10. But

10. But this and every other rule intended to prevent the rash and unnecessary use of the *forceps*, must be subject to the judgment of the person who may have the management of any individual case.

11. Care is also to be taken that we do not, through an aversion to the use of instruments too long delay that assistance we have the power of affording with them.

12. The difficulties which attend the application and the use of the *forceps* are far less than those of deciding upon the proper time when, and the cases in which, they ought to be applied.

13. The lower the head of the child has descended, and the longer the use of the *forceps* is deferred, the easier will in general their application be, the success of the operation more certain, and the hazard of doing mischief less.

14. The *forceps* should always be applied over the ears of the child; it must therefore be improper to apply them when we cannot feel an ear.

15. But

15. But when an ear can be felt by a common examination, the case is always manageable with the *forceps*, if the circumstances of the mother require their use.

16. The ear of the child which can be felt, will be found towards the *ossa pubis*, or under one of the *rami* of the *ischia*.

17. The ears are not turned to the sides of the *pelvis* till part of the hind head has emerged under the arch of the *ossa pubis*, when the use of the *forceps* can very seldom be required.

18. When you have determined on using the *forceps*, and explained the necessity of using them to the patient and her friends, she is to be placed in the usual position on her left side, near to the edge of the bed; and the instruments, warmed in water and smeared with some unctuous application, are to be laid conveniently by you.

Note. Women, impelled by their fears and their sufferings in difficult labours, will very frequently implore you to deliver them with instruments long before you will be convinced of the necessity of using them. In many

many cases I have found it expedient and encouraging to them to fix upon some distant time when they should be delivered, if the child were not before born; six, or eight, or twelve hours, for instance. In some cases of great apprehension I have also shewn them, upon one of my knees, all that I intended to do with the *forceps*.

The following rules are given on the presumption that the head of the child presents with the face inclined or verging towards the hollow of the *sacrum*, and that the common short *forceps* are intended to be used; but if any other kind of *forceps* should be preferred, the rules must be adapted to the instrument.

SECTION II.

1. Carry the fore finger of the right hand to the ear of the child.

2. Then take the blade of the *forceps* to be first introduced, by the handle in the left hand, and conduct it between the head of the child

 and

and the finger already introduced, till the point reaches the ear.

3. The farther introduction must be made with a motion resembling a slight degree of semi-rotation, and the point of the blade must be kept close to the head of the child, by gently raising the handle as the instrument is advanced.

4. The blade of the *forceps* must be carried up till the lock reaches the external parts, near the inferior edge of the *ossa pubis*.

5. Should any difficulty occur in the introduction of either of the blades, we must withdraw them a little, to discover the obstacle, and never strive to overcome it with violence.

6. When the first blade is introduced, it must be held steadily in its situation, as it will be a guide in the introduction and application of the second blade.

7. The second blade of the *forceps* must be conducted upon the fore finger of the left hand, passed between the head of the child and the *perinæum*, in the same cautious man-

ner as the first, till the lock reaches the *perinæum*, or even presses it a little backward.

8. When the second blade is properly introduced, its situation should be opposite to the first.

9. In order to lock the *forceps*, the handles of which are at a considerable distance from each other, the blade first introduced must be brought down and carried so far back that it will lock with the second blade, held in its first position.

10. Care should be taken that nothing be entangled in the lock of the *forceps*, by carrying the finger round it.

11. It is convenient to tie the handles of the *forceps* together, when locked, with force sufficient to keep them from sliding or shifting their position.

12. If the blades of the *forceps* were introduced so as not to be opposite to each other, they could not be locked.

13. Should the handles of the *forceps* when applied come close together, probably the bulk of the head is not included between them,

and therefore when we acted with them they would slip.

14. If the handles when locked are at a great distance from each other, they are not well applied, and will probably slip.

15. But in these estimations allowance is to be made for the different dimensions of the heads of children.

16. The *forceps* will never slip if judiciously applied, if the case be proper for their use, and we act circumspectly with them.

NOTE. The difficulties in the application of the *forceps* arise, from attempting to apply them too soon; from passing them in a hurry, or in a wrong direction; or from entangling the soft parts of the mother between the instrument and the head of the child. Of course, we are always to be guarded against these circumstances.

SECTION III.

1. There is no occasion, and it would be hurtful to attempt to change the position of the head, when the *forceps* are applied, before we began to extract.

2. For if the action with the *forceps* be slow, the head of the child will turn in the same manner, and for the same reasons, as in a natural labour.

3. Therefore the *forceps* being fixed upon the head must also change their position according to its descent, and the handles be gradually turned from the *ossa pubis* and *sacrum*, where they were first placed, to the sides of the *pelvis*.

4. The handles of the *forceps* likewise, though originally placed far back towards the *sacrum*, that is, in the direction of the cavity of the *pelvis*, will be gradually turned, as the child advances, more and more towards the *pubes*, that is, in the direction of the *vagina*.

5. The

5. The first action with the *forceps* must be to bring the handles, firmly grasped in one or both hands, slowly towards the *pubes*, till they come to a full rest.

6. After waiting till the pains return, or an imaginary interval if there should be a total want of pain, the handles are to be carried back in the same slow and cautious manner till the lock reaches the *perinæum*, using at the same time a certain degree of extracting force.

7. The subsequent actions must be from handle to handle, or occasionally by simple traction; but the action of that blade which was towards the *pubes*, must be stronger and more extensive throughout the operation, than the action with the other blade, which has no *fulcrum* to support it.

8. By a repetition of these actions, always directed according to the position of the handles, with their force increased, diminished, or continued, according to the exigence of the case, we shall in a short time perceive the head of the child descending.

9. When

9. When the head begins to descend, the force of the action with the *forceps* must be abated, and as that advances, the direction of the handles must change by degrees more and more to each side, and towards the *pubes.*

10. The lower the head of the child descends, the more gently we must proceed, in order to prevent any injury or laceration of the *perinæum* or external parts, which are likewise to be supported in the same manner as in a natural labour.

11. In some cases, the mere excitement occasioned by the application of the *forceps*, or the very expectation of their being applied, will bring on a return or an increase of the pains sufficient to expel the child without their assistance.

12. In other cases we are obliged to exert very considerable force, and to continue it for a long time; so that one operation may be safely and easily finished in twenty minutes, or even a less time, and another may require more than an hour for its completion, and the

the repeated exertions of very considerable force.

13. In some cases it happens also, that the obstable to the delivery exists at one particular part of the *pelvis*, and when that is surmounted, the remainder of the operation is easy; but in other cases there is some difficulty through the whole course of the *pelvis*.

14. Before the exertion of much force, we are always to be convinced that a small or a moderate degree of force is not equal to our purpose.

15. In every case in which the *forceps* have been applied, they are not to be moved before the head is extracted, even though we might have little or no occasion for them.

16. When the head of the child is born the *forceps* are to be removed, and the remaining circumstances are to be managed as if the labour had been natural.

NOTE. The general arguments against the use of instruments have been drawn from their abuse: it appears, however, that necessity will,

in

in some instances, justify the use of the *forceps;* that when such necessity exists, their use is not only justifiable, but often highly advantageous; that delay to apply them, and slowness in their application and use, will secure, as far as is possible, both the mother and child from untoward accidents; but that mischief cannot be prevented if they are applied too soon, or the operation with them be performed in a hurry.

It would be a very desirable thing that every student should have an opportunity of seeing the operation with the *forceps* performed before he goes into practice; but that is not always possible. Yet if he has been properly instructed in the principles of the application and use of the *forceps*, reflects seriously before he determines on performing the operation, and proceeds slowly but not timidly in it, he can hardly fail to succeed. Hurry, in any operation, is a very common sign both of want of information and of fear; and attention is to be paid to the order of the rule in *Celsus,* 1. *tutò,* 2. *citò,* 3. *jucundè.*

SECT. IV.

On the application and use of the Vectis

1. We shall have a just idea of the *vectis* by considering it as one blade of the *forceps*, a little lengthened and enlarged, with the handle placed in a direct line with the blade, that is, without any lateral curvature.

2. The general condition and circumstances of labours before stated, as requiring and allowing the use of the *forceps*, will hold equally good when the *vectis* is intended to be used.

3. In the application of the *vectis* two fingers, or the fore finger of the right hand is to be passed to the ear of the child.

4. Then taking the *vectis* by the handle, or with the blade shortened, in the left hand, conduct it slowly till the point of the *vectis* reaches the ear, however that may be situated.

5. The instrument is then to be advanced, as was advised with the *forceps*, till according to your judgement the extremity of the blade reaches

reaches as far, or a little beyond, the chin of the child.

6. Then grasping the handle of the instrument firmly in the right hand, wait for the accession of a pain.

7. During the continuance of the pain raise the handle of the instrument gently but firmly towards the *pubes*, drawing at the same time with some degree of extracting force.

8. When the pain ceases let the instrument rest, and on its return repeat the same kind of action, alternately resting and acting in imitation of the manner of the pains.

9. By a repetition of this kind and manner of action the head of the child is usually advanced, and the face turning gradually towards the hollow of the *sacrum*, the position of the handle of the *vectis* will be altered, and the direction of the action with it of course should be changed.

10. When the head is perceived to descend, we must proceed more slowly and carefully, according to the degree of descent, in order to prevent any injury to the external parts, which

which is to be prevented, as was directed when the *forceps* are used.

11. But if by the continuance of the moderate force before recommended, the head should not descend, it must be gradually and cautiously increased till it becomes sufficient to bring down the head.

12. In the action with the *vectis* the back part of the instrument must rest upon the *symphysis* of the *ossa pubis*, or upon the *ramus* of the *ischium*, according to its position, as upon a *fulcrum*, for its support.

13. By passing the flat part of the hand to the back of the blade of the instrument when in action, we shall be occasionally able to lessen or take off this pressure, which must otherways be made upon the parts of the mother.

14. Some have recommended the *vectis* to be used when the head of the child was higher up in the *pelvis* than is before stated, as justifying the use either of this instrument or the *forceps*.

15. They have also recommended the *vectis* when the head of the child was firmly locked in

in the *pelvis*, and have asserted that by its use there is often obtained a very good chance of preserving the life of a child, which must otherwise be inevitably lost.

16. Others have by frequent use acquired such dexterity, as to be able to extract the head of a child, in the situation first stated, with a single sweep of the instrument.

17. Some have also advised the introduction of the *vectis* between the *sacrum*, or sacro-sciatic ligaments, and the head of the child, from a belief that it could be equally or more advantageously used in this position than in that first stated.

18. But having ever considered the use of all instruments as a thing to be lamented, and when I did use them, esteemed the *safety* of using them as my principal object, I cannot deviate from these principles, or enter upon a discussion of points of practice, of which, as far as I am competent to judge, I cannot approve.

NOTE. Before, and immediately after the publication of my second Essay on Difficult

Labours, several gentlemen, with whom I converse, and to whom I ought to pay great respect, reprehended in very decided terms what I have advanced with regard to the *forceps* and *vectis*. Some maintained that the *forceps* is an instrument far superior to the *vectis*, of which I was accused of speaking too favourably. Others, of equal respectability, accused me of speaking with timidity, or restraint, of those advantages which, they asserted, the *vectis* had over the *forceps*. This very strong evidence could only be invalidated by its contradiction, but the very respect which I bear to the witnesses, compelled me to pass over their evidence, and to rely upon my own experience and judgment.

I did not speak of the mechanism of the instruments, or of the operation performed when we had applied, and acted with them, as these have hitherto been very imperfectly and often erroneously explained. The subject came under consideration in the ordinary course of the work, and having frequently used both the instruments, I stated

the matter equitably, according to the best of my abilities, and in such a way that, I thought, students, who were principally concerned in the discussion, being left with the choice of either instrument, according to the doctrines of the particular professors whom they might attend, could not be misled. It is not to be expected that men versed in practice should change their opinions or alter their practice, or, in short, pay much regard to disputes about instruments, if any were disposed to raise them.

It then was, and yet remains my opinion, founded, as I before observed, on my experience with both instruments, that the superior excellence which has been attributed to each of these instruments, ought chiefly to be ascribed to the dexterity which may be acquired by the habit of using either of them. It is also my opinion that we may, in general, either with the *forceps* or *vectis*, effectually and conveniently give that assistance which is required in cases of difficult parturition, allowing and justifying their use. In particular

cases it may perhaps be proved that one instrument is more commodious than another.

But if the *vectis* be depreciated by those who have never used it, and are not expert in its use, because they prefer the *forceps*; or if the known properties of the *forceps* be not allowed by those who do not use them, because they prefer the *vectis*, the proper inference would not be, that either of the instruments ought to be condemned; but that we are in possession of two instruments well adapted to answer the same purpose, if they are prudently used; or, that neither of them ought to be used.

In those cases, in which the face is turned towards the *pubes*, or in which the face of the child is the presenting part, it is generally more convenient to deliver with the *vectis*, or with one blade of the *forceps*, than with both blades.

CLASS III. Preternatural Labours.

Character.—Labours in which any part of the child presents, except the head.

TWO ORDERS.

ORDER I.

Presentations of the Breech, or inferior Extremities.

ORDER II.

Presentations of the Shoulder, or superior Extremities.

SECTION I.

1. The presentation of children at the time of birth may be of three kinds. 1. With the head.

head. 2. With the breech, or inferior extremities. 3. With the shoulder, or superior extremities.

2. Presentations of the first kind are called natural, those of the second and third kind, preternatural.

3. Preternatural presentations have been subdivided into a much greater variety, but without any practical advantage.

4. The presumptive signs of the preternatural presentation of children are very uncertain, nor can it ever be determined what the presentation is, till we are able to feel the presenting part.

5. When any part of a child can be felt, we may form our judgment of the presenting part by the following marks.

6. The head may be distinguished by its roundness, its firmness, and its bulk.

7. The breech may be known by its bulk, by the cleft between the buttocks, by the parts of generation, and by the discharge of *meconium*.

8. The foot may be distinguished by its length,

length, by the heel, by the shortness of the toes, and the want of a thumb; and the hand by its flatness, by the thumb, and the length of the fingers.

SECTION II.

On the first Order of Preternatural Presentations.

1. In this kind of presentation the breech, one hip, the knees, and one or both legs, are to be included.

2. In these presentations it was formerly supposed necessary, as soon as they were discovered, to introduce the hand to bring down the feet, and to extract the child with expedition.

3. But, according to the present practice, such labours are not to be interrupted, but allowed to proceed as if the presentation were natural; unless the necessity of giving assistance should arise from some circumstance independent of the presentation.

4. By

4. By acting on this principle, when the breech of the child is expelled by the pains, the parts are sufficiently distended to allow the body and head to follow without any danger from delay.

5. But if the feet of the child were to be brought down in the beginning of labour, the difficulty with which it would be expelled or could be extracted, increasing as it advanced, the child would probably die before the woman was delivered, and she would be in danger of suffering mischief.

6. In cases of this kind there is also equal reason, when the breech is on the point of being excluded, for our guarding the *perinæum* from the hazard of laceration as in presentations of the head.

7. In first labours, the child, unless it be small, will not unfrequently be born dead when the breech, or inferior extremities, present; but in subsequent labours they will usually be born living, if there be no other impediment than that which is occasioned by the presentation.

8. The

8. The injuries which the presenting part of the child, especially the *penis* and *scrotum*, may sustain will often be alarming, and appear dangerous, but by soothing and gentle treatment, they are soon recovered.

9. Should there be reason to think the child dead, or the powers of the mother insufficient to expel it, we must then give such assistance as may be required.

10. This assistance must be given with the hand or with a blunt hook or crotchet, hitched in the groin of the child; or, which I prefer, by passing a ligature round the bent part of the child at the groin, with which we can hardly fail to extract it.

11. But every assistance of this kind must be given with discretion, and we must first be convinced of the necessity before we interfere.

12. Should a child presenting with the breech advance, though slowly, it is better to be satisfied with this slow progress; or, we might break, without much force, the neck of the thigh bone, or separate the bones of the

pelvis

pelvis of the child, by either of which accidents future lameness would be occasioned.

SECTION III.

Of the second Order of Preternatural Presentations.

1. In this kind of presentation are included the shoulders, the elbows, and one, or both arms.

2. In all these presentations we shall be under the necessity of turning the child, but as they may be attended with circumstances widely different, it is necessary to make the following distinctions.

3.—I. When the *os uteri* is fully dilated, the membranes unbroken, or the waters lately discharged, a superior extremity being perceived to present, before the *uterus* is contracted.

4.—II. When the membranes break in the beginning of labour, the *os uteri* being little dilated.

5.—III.

5.—III. When the *os uteri* has been fully dilated, the membranes broken, and the waters long discharged, the *uterus* being at the same time strongly contracted, and the body of the child jammed at the superior aperture of the *pelvis*.

6.—IV. When, together with any of these circumstances, there is a great disproportion between the size of the head of the child, and the dimensions of the cavity of the *pelvis*.

SECTION IV.

On the Cases which come under the first Distinction.

1. Whenever there is a necessity of turning a child, the patient is to be placed upon her left side, near the edge of the bed; or sometimes, when we expect or find much difficulty, in a prone position, resting upon her elbows and knees.

2. All the advantage to be gained from any particular

particular position of the patient is, to allow us the free and dextrous use of our hands; the situation of the child not being altered by the position of the patient.

3. The *os externum* is then to be dilated with the fingers reduced into a conical form, acting with a semi-rotatory motion of the hand.

4. The artificial dilatation of all parts must be made slowly, in imitation of the manner of natural dilatation.

5. The *os externum* should be amply distended before the hand is carried farther, or its contraction round the wrist will be an impediment in the subsequent part of the operation.

6. When the hand is passed through the *os externum*, it must be slowly conducted to the *os uteri*, which being wholly or sufficiently dilated, we must break the membranes by perforating them with a finger, or by grasping them firmly in the hand.

7. The hand must then be passed along the sides, thighs, and legs of the child, till we come to the feet.

8. If

8. If both the feet lie together we must grasp them firmly in our hand; but if they are distant from each other, and we cannot conveniently lay hold of both feet, we may deliver by one foot without much additional difficulty.

9. Before we begin to extract we must be assured that we do not mistake a hand for a foot.

10. The feet must be brought down, with a slow waving motion, into the *pelvis;* when we are to rest and wait till the *uterus* begins to contract, still retaining them in our hand.

11. When the action of the *uterus* comes on, the feet are to be brought lower at each return of pain, till they are extracted through the external orifice, and the labour may then be finished, partly by the efforts of the mother, and partly by art.

12. If the toes are turned towards the *pubes,* the back of the child is towards the back of the mother, which is an unfavourable position.

13. But if the toes are towards the *sacrum,*

 the

the back of the child is towards the *abdomen* of the mother, which is proper; and all other positions of the child must be gradually turned to this as the body is extracting.

14. Yet this position of the child is only advantageous when the head comes to be extracted.

15. When the feet of the child have passed through the *os externum*, wrap them in a cloth, and holding them firm, wait till there is a contraction of the *uterus*, or a pain, during the continuance of which gently draw down the feet.

16. When the pain ceases we must rest, and proceed in this manner through the delivery, assisting the efforts of the patient, but not making the delivery wholly artificial.

17. When the breech comes to the *os externum*, the child must be extracted very slowly through it, and in the proper direction, or here will be danger of lacerating the *perinæum*.

18. When the child is brought so low that the *funis* reaches the *os externum*, a small por-

tion of it is to be drawn out, to slacken it to lessen the chance of compression, or to prevent the separation of it from the body of the child, or of the *placenta* from the *uterus;* and from this time the operation should be finished as speedily as it can with safety.

19. But if the circulation in the *funis* be undisturbed there is no occasion for haste, as the child, we are then assured, is in safety.

20. The child may be extracted without much difficulty if we act alternately from side to side, by making a lever of its body, and sometimes by pressing it from the *ossa pubis* with the fingers.

21. If the child should stick at the shoulders, the arms must be successively brought down.

22. This is to be done by raising the body the opposite way, and by successively bending them at the elbow very slowly, lest they should be broken, and the hand must be cleared toward the *pubes.*

23. When both the arms are brought down, the body of the child must be supported upon our left hand placed under the breast, the

fingers on each side of the neck, and the body supported upon our left arm.

24. Then placing the right hand over the shoulders, and pressing with our fingers the head towards the *sacrum*, we must ease the head along, gradually turning the body of the child as it advances toward the *abdomen* of the mother.

25. If the head should not come easily away, we must introduce the fore finger of the left hand into the mouth of the child, by which the position of the head will be rendered more convenient.

26. When the head begins to enter the *os externum*, we must proceed very slowly, and support the *perinæum*, by spreading the fingers of the left hand over it.

27. In some cases there may be a necessity of speedily extracting the child in order to preserve its life, but we must also recollect, that the child is often lost by endeavouring to extract it too hastily.

28. When a child has been extracted by the feet, the *placenta* usually separates very soon and

and very easily; but in the management of this we are to be guided by the general rules.

SECTION V.

On the Cases which come under the second Distinction.

1. We are first to ascertain the presenting part, and if, together with the arm, the head is perceived by a common examination, there may be no occasion to turn the child, such case only constituting the third variety of natural labour.

2. But if the case should be such as to require the child to be turned, it might be doubted whether it were proper to dilate the *os uteri* by art, or to wait for its spontaneous dilatation.

3. Perhaps neither of the methods can be constantly followed, but we may generally say, that there is under these circumstances neither danger nor increase of difficulty, from waiting for

for the spontaneous dilatation, which is therefore in general to be preferred.

4. But if more speedy dilatation should be required, whatever is done by art should be done slowly, and in imitation of nature.

5. The *os uteri* is always to be considered as completely dilated when we judge it will allow of the easy introduction of the hand.

6. When we have fixed upon the proper time and begin the operation, the *os externum* must be dilated in the manner before advised.

7. The hand must always be introduced into the *uterus*, on that side of the *pelvis* where it will pass most conveniently; and there is usually most room at that part which will lead to the feet.

8. It is generally most convenient to pass the hand between the body of the child and the *ossa pubis*, the feet being most commonly found lying toward the belly of the mother.

9. In cases which come under this distinction the *uterus* is seldom contracted very strongly upon the body of the child, but always in some degree.

10. But

10. But the difficulties which may occur in the operation of turning the child, in these cases, will be fully explained under the following distinction.

SECTION VI.

On the Cases which come under the third Distinction.

1. The difficulty in the management of these cases depends upon the degree of contraction of the *uterus*, and upon the distance or awkward position of the feet of the child, but chiefly upon the former circumstance.

2. The *uterus* is in some cases contracted in a globular, and in others in a longitudinal form.

3. It is always easier with an equal degree of contraction to turn the child when the *uterus* is contracted in a globular, than in a longitudinal form.

4. When we are called to a case of this kind it is better not to form, or to give a hasty opinion,

opinion, nor to attempt to deliver the patient immediately, but to deliberate upon it, and then to make a second examination.

5. If the second examination should confirm our first opinion, we may prepare for the operation.

6. We shall be able to judge in what part of the *uterus* the feet of the child lie, if we consider whether it be the right or left hand which presents, which may be known by the direction of the thumb and of the palm of the hand.

7. But the contraction of the *uterus* is the principal difficulty to be surmounted, and the danger in turning the child is in proportion to the difficulty.

8. The danger in turning a child when there is a strong contraction of the *uterus*, is a fingle danger, that of rupturing the *uterus*.

9. The contraction of the *uterus* is of two kinds; first, the permanent contraction, in consequence of the waters having been long drained off, which may occur when there has been little or no pain.

10. Second,

10. Second, the extraordinary contraction arising from the action of the *uterus*, returning at intervals, and always attended with pain.

11. The hand must be introduced with a degree of force sufficient gradually to overcome the permanent contraction of the *uterus*, or the operation could never be performed.

12. But if we were to attempt to overcome the extraordinary contraction, it must follow, that we can, or cannot overcome it.

13. In the first instance we should be in danger of rupturing the *uterus*, and in the second the hand would be cramped, and we should be unable to proceed with the operation.

14. The deduction is therefore clear, that we ought not to proceed in our attempts to turn the child while the *uterus* is acting with violence.

15. The action of the *uterus* is rendered more frequent and strong by the generally increased irritability of the patient.

16. Before we attempt to deliver, it will be prudent

prudent to endeavour to lessen this irritability, in many cases by bleeding, by clysters, and by an opiate, which, to answer this purpose, should be given in two or three times the usual quantity.

17. When the opiate takes effect, and the patient becomes disposed to sleep, we must consider this state as extremely favourable, and proceed without loss of time to the delivery.

18. There never can be occasion to separate the arm which presents from the body of the child, and when this has been done, instead of facilitating, it has impeded the operation.

19. Without regarding the arm, the right or left hand, as may be most convenient to ourselves, must be introduced in the manner before directed, and conducted slowly into the *uterus* if there be sufficient room.

20. But if the child be jammed at the superior aperture of the *pelvis*, the hand cannot be introduced.

21. We must then fix our forefinger and thumb

thumb in the form of a crutch in the armpit of the child, and pushing the shoulders towards the head, and towards the *fundus* of the *uterus*, we must by degrees raise the body of the child till there be room for the introduction of the hand.

22. If while we are introducing our hand we perceive the action of the *uterus* come on, we must not proceed till that ceases or is abated.

23. The hand, when introduced, is also to be laid flat during the continuance of the action of the *uterus*, lest the *uterus* be injured by its own action on the knuckles.

24. When the action ceases or is abated, we must renew our attempts to carry up our hand to the feet of the child.

25. In this manner we are to proceed, alternately resting and exerting ourselves, till we can lay hold of one or both feet.

26. There is sometimes much difficulty in getting to the feet, and sometimes in extracting them, especially when the *uterus* is contracted in a longitudinal form.

27. In

27. In such cases it is often convenient, when we can reach the knees, to bend them cautiously, and to bring down the legs and feet together.

28. But before we begin to extract we should examine the parts we hold, and be assured they are the feet; and we must extract slowly and steadily.

29. If we hurry to bring down the feet they may slip from us, and return to the place from which they were brought.

30. We must then carry up the hand again, and grasping the foot or feet more firmly, bring them down in the cautious manner before advised.

31. When the feet are brought down, if there be difficulty in extracting them, we must endeavour to slide a noose, first formed upon our wrist, over the hand to secure the feet, by which the hazard of their return will be prevented, and the succeeding part of the operation much facilitated.

32. When the noose is fixed over the ancles, we must pull by both ends of it with one hand,

hand, and grasp the feet with the other, but we must not attempt to proceed hastily.

33. When there is afterward much difficulty in extracting the child, it is probably owing to the body of the child being jammed across the superior aperture of the *pelvis*.

34. It will then be proper to pass the finger and thumb as directed at 21, to raise the shoulders and body of the child toward the *fundus* of the *uterus*, with one hand, and with the other extract at the same time with the noose.

35. When the breech of the child has entered the *pelvis*, we must proceed with deliberation, but there will be little farther difficulty, except from the smallness of the *pelvis*, of which we shall speak in the next section.

SECTION VII.

On those Cases which come under the fourth Distinction.

1. The disproportion between the head of the child and the dimensions of the *pelvis*, may be added to any of the circumstances mentioned under the preceding distinctions.

2. But as the management of these has been already directed, there is now occasion to speak only of the peculiar difficulties arising from that cause.

3. The degree of difficulty in these cases is greater or less according to the degree of disproportion; but the difficulty of extracting any part of the body of the child is little, compared with that which attends the extraction of the head.

4. We will therefore suppose the body of the child to be brought down, but that the head cannot be extracted by any of the methods before recommended.

5. The force with which we endeavour to

extract must then be increased, till it is sufficient to overcome the difficulty or resistance.

6. But as the necessity of using great force can only be known by the failure of a less degree to produce the desired effect, we must begin our attempts with moderation, and gradually increase our efforts according to the exigence of the case.

7. The force exerted should also be uniform, controuled or commanded, and exerted by intervals, in the manner of the natural pains.

8. If the head should not descend with the force which we judge can be safely exerted, we must rest, and give it time to collapse.

9. We may then renew our attempts, extracting from side to side, or backwards and forwards, as may best conduce to ease the head through the distorted *pelvis*, alternately resting and endeavouring to extract.

10. But if the head should descend in ever so small a degree, the force is not to be increased with the view of finishing the delivery

 expeditiously,

expeditiously, but we must be satisfied with our success, and proceed circumspectly.

11. When the head once begins to descend there is seldom much subsequent difficulty in finishing the delivery, as the cause of the difficulty usually exists at one particular part of the *pelvis*.

12. But should the head rest in this situation for several hours, no additional inconvenience would thence arise to the mother, and the longer it rested the greater advantage we should probably gain when we renewed our attempts to extract it.

13. It may be presumed when the head of the child has been wedged for a long time in the position we are supposing, and great force has been used to extract it, that there is little reason to expect the child should be born alive; yet instances of this are said to have occurred in practice.

14. When we can hook a finger on the lower jaw of the child, the direction of the head may be changed to one more favourable, and the delivery thereby facilitated.

15. But

15. But we must not extract with so much force as to incur the hazard of breaking or tearing away the jaw.

16. Pressing the head of the child from the *ossa pubis* to the *sacrum*, with the fingers or thumbs carried up as high as we can reach, will often be of great use in these cases.

17. If the difficulty of extracting the head arises from its enormous size, occasioned by some disease, as the *hydrocephalus*, &c. these methods steadily pursued will answer our intention, as by a prudent use of the force in our power, the integuments will burst, or even the bones be broken.

18. Cases of this kind, in which it might be necessary or expedient to use one or both blades of the *forceps*, or to lessen the head, very seldom occur.

19. But if such cases should occur, the latter operation is preferable to the use of the *forceps*, and the utmost care must be taken that we do no injury to the mother.

20. Under these circumstances should it be absolutely necessary to lessen the head of the child,

child, the perforation may be conveniently made behind either of the ears, or in any part where we can most conveniently fix the point of the *perforator*, and the general rules of the operation must be followed.

21. By the force used, should the neck of the child have given way, we are not to separate the body from the head altogether, but we must rest longer and act more moderately.

22. But should the body be separated from the head by the force we have used, or should we be called to a case of this kind, there will be no occasion, for this reason alone, to act hastily or rashly, as the head may even then be expelled by the pains.

23. But if this should be impossible, or if it be absolutely necessary to extract the head speedily, on account of the state of the mother;

24. Then the general rules for lessening the head must be accommodated to the exigencies of this particular case, and the head may be confined to a proper situation by compressing the

the *abdomen* with a napkin passed across it, or by the hands of an assistant.

SECTION VIII.

Miscellaneous Observations.

1. It sometimes happens that no part of the child can be perceived before the membranes break, though the *os uteri* be fully dilated.

2. In such cases we should not be absent when the membranes break, lest it should prove a preternatural presentation, requiring the child to be turned.

3. In some cases even when the *os uteri* is dilated, the membranes broken, and the waters discharged, no part of the child can be felt.

4. It will then be prudent, in the cautious manner before directed, to introduce the hand far enough into the *uterus*, to discover the part which does present.

5. If

5. If the head be found to present we should withdraw our hand, and suffer the labour to proceed in a natural way.

6. If the inferior extremities should present, we may bring down the feet, and then suffer the labour to go on uninterruptedly.

7. But if the shoulder or superior extremities should present, we must proceed to the feet, and turn the child as was before directed.

8. By this conduct we shall guard against the danger of turning a child in a contracted *uterus.*

9. If we should be called to a case in which the arm presented, and much force had been used to extract the child in that position, the arm having perhaps been mistaken for a leg, and the pains being at the same time violent, it may be impossible, without giving much pain, and incurring some danger of rupturing the *uterus*, to turn the child, or even to introduce the hand into the *uterus*, the shoulder of the child being pushed low down into the *pelvis.*

10. Under such circumstances, it is improper to attempt to introduce the hand into the *uterus*,

uterus, or to turn the child, as it will generally be expelled by the efforts of the mother; or it may be extracted by methods less painful and hazardous to the mother.

11. Yet in these cases the body of the child does not come doubled, but the breech is the first part delivered, and the head the last, the body turning, as it were, on its own *axis*.

12. Nor is this observation made with regard to a small child coming prematurely, as it will apply to a child of a common size, and when a woman is at her full time, provided the *pelvis* be well formed.

13. This fact, of the possibility of a child being expelled in this position, though originally contradicted with great confidence, is now confirmed in the most satisfactory manner by many cases which have been recorded, in some of which the children have even been born living.

14. From these it might be inferred, that a woman in a state of nature, or in perfect health, would not die undelivered, though the arm of the

the child might present, supposing that she was not assisted by art.

15. Yet it is always requisite and proper to turn children when the superior extremities present, if the operation can be performed without the hazard of injuring the mother, and we have a better chance of lessening the sufferings of the mother, and of preserving the child.

16. But when there is no chance of preserving the child, and yet it cannot be turned without the greatest danger to the mother, knowing the possibility of its being expelled in this position, it is necessary to consider the propriety of the operation before we perform it.

17. It remains, however, to be proved by future experience, how far, and in what cases, the preceding observation ought to be a guide in practice.

18. In cases of presentation of the superior extremities, in which the difficulty of turning the child would be very dangerous, and great

or

or insurmountable, another method has been recommended.

19. But of this method, which has been practised by one gentleman to whose knowledge and experience I pay great respect, I am not a competent judge, having never tried it.

20. I therefore refer to the annexed note for an explanation and history of the method to which I allude.

Note. Hoorneus, sæpe laudatus, adhuc peculiarem, novum eumque breviorem modum, fœtum mortuum cum brachio arctissimè in vagina uteri hærente extrahendi, invenit atque descripsit, qui in eo consistit, ut quando ad pedes pervenire nequit, collum, utpote quod in fœtibus valdè adhuc tenerum est, vel scalpello a reliquo trunco resecet, vel unco idoneo quam cautissimè auferat. Hoc enim facto, vel sponte mox prorumpit ex utero fœtus, vel tamen, dum brachium propendens attrahitur, quod medico loco habenæ inservit, quam facillimè excutitur. Caput vero deinde seorsim mox vel manu, vel aliis

aliis propositis artificiis, si manus parum esset, ejiciendum.

HEISTER. cap. cliii. sect. ix.

The latter part of this description is further explained in the next section.

SECTION IX.

I am induced to reprint the following, as they were the very cases which first gave me an opportunity of observing the spontaneous evolution.

CASE I.

In the year 1772, I was called to a poor woman in Oxford Street, who had been in labour all the preceding night, under the care of a midwife. Mr. Kingston, now living in Charlotte Street, and Mr. Goodwin, surgeon, at Wirksworth, in Derbyshire, who were at that

that time students in midwifery, had been sent for some hours before I was called. The arm of the child presenting, they attempted to turn and extract it by the feet, but the pains were so strong as to prevent the introduction of the hand into the *uterus*. I found the arm much swelled, and pushed through the external parts in such a manner that the shoulder nearly reached the *perinæum*. The woman struggled vehemently with her pains, and, during their continuance, I perceived the shoulder of the child to descend. Concluding that the child was small, and would pass, doubled, through the *pelvis*, I desired one of the gentlemen to sit down to receive it, but the friends of the woman would not permit me to move. I remained by the bed-side till the child was expelled, and I was very much surprised to find, that the breech and inferior extremities were expelled before the head, as if the case had originally been a presentation of the inferior extremities.

The child was dead, but the mother recovered

vered as soon, and as well, as she could have done after the most natural labour.

CASE II.

In the year 1773, I was called to a woman in Castle Street, Oxford Market, who was attended by a midwife. Many hours after, it was discovered that the arm of the child presented. Mr. Burosse, surgeon, in Poland Street, was sent for, and I was called into consultation. When I examined, I found the shoulder of the child pressed into the superior aperture of the *pelvis*. The pains were strong, and returned at short intervals. Having agreed upon the necessity of turning the child, and extracting it by the feet, I sat down and made repeated attempts to raise the shoulder, with all the force which I thought could be safely used; but the action of the *uterus* was so powerful that I was obliged to desist. I then called to mind the circumstances of the case before related, mentioned them to Mr. Burosse,

and proposed that we should wait for the effect, which a continuance of the pains might produce, or till they were abated, when the child might be turned with less difficulty. No further attempts were made to turn the child. Then every pain propelled it lower into the *pelvis*, and in a little more than one hour the child was born, the breech being expelled, as in the first case.

This child was also dead, but the mother recovered in the most favourable manner.

Having been prepared for observing the progress of this labour, I understood it more clearly, and attempted to explain both in my lecture on the subject, and in the aphorisms which were printed for the use of the students, my opinion of the manner in which the body of the child turned, as it were, upon its own axis. I also pointed out the circumstances, in which, I supposed, the knowledge of the fact might be rendered useful in practice; but with great circumspection.

CASE III.

January the 2d, 1774, I was called to Mrs. Davis, who keeps a toy-shop, in Crown Court, Windmill Street. She had been a long time in labour, and the arm of the child presented.

The late Mr. Eustace had been called on the preceding evening, and had made attempts to turn the child, which he had continued for several hours without success. I was sent for about one o'clock in the morning, and on examination found the arm pushed through the external parts, the shoulder pressing firmly upon the *perinæum*. The exertions of the mother were wonderfully strong. I sat down while she had two pains; by the latter of which, the child was doubled, and the breech expelled. I extracted the shoulders and head, and left the child in the bed. Mr. Eustace expressed great astonishment at the sudden change; but I assured him that I could claim no other merit on account of this delivery, except that I had not impeded an effect which was wholly produced by the pains.

This

This child was also dead, but the mother recovered in the most favourable manner.

In all these cases, the women were at the full period of utero-gestation, and the children were of the usual size.

Many other cases of the same kind have occurred to me; and with the histories of several, varying in the time or manner in which the evolution of the child was made, I have lately been favoured by gentlemen of eminence in the profession, and many others have been published in different countries. But these are sufficient to prove the fact, that in cases in which children present with the arm, women would not necessarily die undelivered, though they were not assisted by art.

With respect to the benefit we can, in practice, derive from the knowledge of this fact, I may be permitted to repeat, that the custom of turning and delivering by the feet in presentations of the arm, will remain necessary and proper, in all cases in which the operation can be performed with safety to the mother, or give a chance of preserving the life of the child.

child. But when the child is dead, and when we have no other view but merely to extract the child, to remove the danger thence arising to the mother, it is of great importance to know the child may be turned spontaneously, by the action of the *uterus*. If we avail ourselves of that knowledge, the pain and danger which sometimes attend the operation of turning a child may be avoided. Nor would any person, fixing upon a case of preternatural presentation, in which he might expect the child to be turned spontaneously, be involved in difficulty, if, from a defect of the pains, or any other cause, he should be disappointed in his expectations. Nor would the suffering, or chance of danger to the patient, be increased by such proceeding, as the usual methods of extracting the child could, under any such circumstances, be safely and successfully practised.

CLASS IV. Anomalous or Complex Labours.

FOUR ORDERS.

ORDER I.

Labours attended with Hemorrhage.

ORDER II.

Labours attended with Convulsions.

ORDER III.

Labours with two or more Children.

ORDER IV.

Labours in which the Funis Umbilicalis *presents before the Child.*

On

On Labours attended with Hemorrhage.

HEMORRHAGE. A discharge of blood from the *uterus*, inordinate with respect to time or quantity.

VARIETIES.

1. In abortions.
2. At the full period of utero-gestation.
3. After the birth of the child.
4. After the expulsion of the *placenta*.

NOTE. No general description or character can be given to Anomalous Labours as a class, because the different orders bear no resemblance to each other. They are brought together merely to prevent the multiplication of classes.

ON ABORTIONS.

SECTION I.

1. With respect to the time of pregnancy, all expulsions of the *fœtus* may be reduced under two distinctions.

2. In the first will be included all those which occur before the *uterus* is sufficiently distended to allow of any manual operation; and these may be properly called abortions.

3. In the second may be classed all those which allow of manual assistance, if required; and which are therefore to be esteemed as labours, premature or at the full time.

4. But no precise period of pregnancy can be fixed as a line for these distinctions.

5. We may, however, in general say, that all expulsions of the *fœtus*, before the end of the sixth month, are to be considered as abortions.

6. But

6. But all expulsions of the *fœtus*, after the expiration of the sixth month, are to be esteemed as labours, and, if attended with the same circumstances, should be managed upon the same principles.

7. Yet expulsions of the *fœtus* sometimes happen so critically, as to make it doubtful to which distinction they should be ascribed, especially in cases in which there are two or more children.

8. When manual assistance is thought needful, the longer the time wanting to complete the full period of pregnancy, the more difficult must be any operation.

SECTION II.

On the Causes of Abortions.

1. The predisposing causes of abortion are, 1st, general indisposition of the constitution; 2d, infirmity of the *uterus*.

2. The general state of women who are disposed

disposed to abortion is very different, some being weak and reduced, and others plethoric.

3. Weakly women become more liable to abortion, because they are susceptible of violent impressions from slight external causes.

4. Plethoric women are more liable to abortion, from the peculiar disposition which the vessels of the *uterus* have, from structure and habit, to discharge their contents.

5. Every action in common life has been assigned as a cause of abortion.

6. But it is to the excess of these actions that we are to attribute their effects, for women in health seldom abort, unless from violent external causes.

SECTION III.

On the Prevention of Abortion.

1. As every disease to which women are liable may dispose to abortion, the method instituted to prevent it must be accommodated to

to the disease, or to the state of the constitution.

2. In some constitutions, abortions may be prevented by repeated bleeding in small quantities, by antiphlogistic medicines, and sometimes by warm bathing.

3. In others, abortion may be prevented by nourishing and invigorating diet and medicines, by bark, by the liberal use of wine, especially claret, and often by cold bathing.

4. But it will be proper, in every case, to avoid all violent exercise, to keep the mind composed, and to rest frequently in an horizontal position.

5. Women seldom abort while they have the vomiting which usually attends early pregnancy.

6. In women who have no spontaneous vomiting, this may be excited, with safety and advantage, by frequently giving small doses of *Ipecacuanha*.

7. Pregnant women are usually costive, and abortions have been very often occasioned by too great assiduity to remove this costiveness, which

which is a natural and proper state, in the early part of pregnancy.

SECTION IV.

On the Signs of Abortion.

1. The signs of abortion are, frequent micturition, *tenesmus*, pains in the back, *abdomen*, and groins, with a sense of weight in the region of the *uterus*.

2. But the most certain sign is, a discharge of blood, which proves that some part of the *ovum* is separated from the *uterus*.

3. It has been supposed when this last sign appears, that there is scarcely a possibility of the patient proceeding in her pregnancy.

4. But I have met with an infinite number of cases in practice, in which, notwithstanding this appearance, once or oftener, to a considerable degree, the discharge has ceased, and no ill consequences have followed.

5. We are therefore to persevere in the use of those means of prevention which are thought

reasonable and proper, till the abortion has actually happened.

6. It is not always prudent to give a decided opinion of the probable event of those cases in which abortion is threatened, as their termination is often different from what might have been expected from the symptoms.

SECTION V.

On the Treatment of Women at the Time of Abortion.

1. The treatment must vary according to the nature and degree of the symptoms.

2. There is an endless variety in the manner in which abortion takes place. Some women abort with sharp and long continued pains, others with little or no pain; some with a profuse and alarming hemorrhage, others with very little discharge. In some the *ovum* has been soon and perfectly expelled, in others after a long time, in small portions, or very

much decayed; but the only alarming symptom is the hemorrhage.

3. The hemorrhage in abortions is not always in proportion to the period of pregnancy, this being in some advanced cases very small; and in others, though very early, abundant.

4. The hemorrhage usually depends upon the difficulty with which the *ovum* may be expelled, and upon the state of the constitution of the patient naturally prone to hemorrhage.

5. The general principles which should guide us in the treatment of hemorrhages, from any other part of the body, are applicable to those of the *uterus*, regard being had to the structure of the *uterus*.

6. If the patient be plethoric, some blood should be taken from the arm at the commencement of the hemorrhage, and the saline draughts with nitre, or acids of any kind, may be given in as large a quantity, and as often, as the stomach will bear.

7. These may also be given during its con-

tinuance, and cloths wet with cold vinegar may be applied to the *abdomen* and loins, and renewed as they become warm. The patient should be exposed to, and suffered to breathe, the cold air.

8. Every application or medicine, actually or potentially cold, may be used. A large draught of cold water or ice may be given with great propriety; and it is the custom in *Italy* to sprinkle ice over the body of the patient if the danger of the case be imminent.

9. Every medicine or application which has the power of slackening the circulation of the blood, eventually becomes an astringent; but astringents, properly so called, can have no power in stopping hemorrhages from the *uterus*.

10. Hemorrhages are stayed by the contraction of the coats of the blood vessels, or by the formation of *coagula*, plugging up the orifices of the open blood vessels.

11. Both these effects are produced more favourably during a state of faintness, which, though occasioned by the loss of blood, becomes a remedy in stopping hemorrhages.

12. Cordials

12. Cordials are not therefore to be hastily given to those who are faint from loss of blood; unless the faintness should continue so long as to make us apprehensive for the immediate safety of the patient.

13. The introduction of lint, a piece of sponge, or any other soft substance, into the *vagina*, has been recommended, and sometimes used with advantage, by favouring the formation of *coagula*.

14. Cold or astringent injections into the *vagina*, or even a piece of ice introduced into the *vagina*, have also been recommended.

15. Opiates have been advised in abortions attended with profuse discharges, and they may sometimes be proper to ease pain, or to quiet the patient, especially when there is a chance of preventing the abortion, or after the accident has happened.

16. But when there is no hope of preventing the abortion, the degree of pain proving the degree of action of the *uterus*, and the action of the *uterus* producing and favouring the contractile power of the blood vessels, if by opiates the

the action of the *uterus* should be prevented or checked, they may contribute to the continuance of the hemorrhage.

17. Hemorrhages in abortions, independent of other complaints, though sometimes very alarming, are not dangerous.

18. But if women abort in consequence of acute diseases, or if they are attended with violent spasms, there will be real and great danger.

19. For they abort because they are already in great danger, and the danger is increased and accelerated by the abortion.

20. The *ovum* has been sometimes retained in the *uterus* for many months after the symptoms of abortion had appeared, and when it had lost the principle of increasing.

21. But it is not now thought necessary or proper in abortions, to use any means for bringing away the *ovum*, or any portion of it which may be retained, with instruments or manual assistance.

SECTION

SECTION VI.

On Hemorrhages at the full Period of Utero-gestation.

1. Under this section will be included all those hemorrhages which may happen in the three last months of pregnancy.

2. These are occasioned first by the attachment of the *placenta* over the *os uteri*; secondly, by the separation of a part, or of the whole *placenta*, which had been attached to some other part of the *uterus*.

3. Hemorrhages arising from the first cause are more dangerous than from the second; but those from the second have sometimes proved fatal.

4. The danger of attending hemorrhages is to be estimated from a consideration of the general state of the patient, of their cause, of the quantity of blood discharged, and of the effect of the loss of blood, which will vary in different constitutions.

5. Hemorrhages

5. Hemorrhages are infinitely more dangerous with sudden than with slow discharges of blood, even though the quantity lost may be equal.

6. The danger arising from hemorrhages is indicated by the weakness or quickness of the pulse, or by its becoming imperceptible, by the paleness of the lips, and a ghastly countenance, by inquietude, by continued fainting, by a high and laborious respiration, and by convulsions.

7. The two last symptoms are usually mortal, though when women are extremely reduced, they are liable to hysteric affections of a similar kind, that are not dangerous.

8. The vomiting, which generally follows violent hemorrhages, indicates the injury which the constitution has sustained by the loss of blood, but by the action of vomiting the patient is always relieved, and it contributes to the suppression of hemorrhages.

9. Near the full period of utèro-gestation, women are always in greater danger in those hemorrhages

hemorrhages which are not accompanied with pain.

10. For the pain proving the contraction of the *uterus*, and this proving that the strength of the constitution is not exhausted, the danger in hemorrhages may often be estimated by the absence or degree of pain.

SECTION VII.

On those Hemorrhages which are occasioned by the Attachment of the Placenta *over the* Os Uteri.

1. Though the *placenta*, which may easily be distinguished from the membranes, or from coagulated blood, as soon as the *os uteri* is a little opened, be attached over the *os uteri*, the woman usually passes through the early part of pregnancy without any inconvenience, or symptom which denotes the circumstance.

2. But before or when the changes previous to labonr come on, there must be an hemorrhage, because a separation of a part of the

the *placenta* is thereby occasioned, and as the disposition to labour advanceth, the hemorrhage is generally, though not universally, increased.

3. With this circumstance very slight external causes are also apt to occasion hemorrhage.

4. When an hemorrhage from this cause has once come on, the patient is never free from danger till she is delivered.

5. The powers of the constitution are undermined by hemorrhages profuse or often returning, so that no efforts, or only very feeble and insufficient ones, are commonly made for the expulsion of the child.

6. We are therefore often obliged to free the patient from the imminent danger she is in by artificial delivery.

7. Of the propriety of this delivery, in cases of dangerous hemorrhage, there is no doubt, or can be any dispute, except as to the precise *time when* the patient ought to be delivered.

8. On the first appearance of the hemorrhage,

rhage, unless it be prodigious in quantity, or unusually terrifying in its effect, it is seldom either requisite or proper to attempt to deliver by art.

9. Nor does it often happen that a second or a third return of the discharge compel us to the delivery by art.

10. But as a patient with this circumstance cannot be secured till she is delivered, and as the delivery is seldom completed by the natural efforts, and as the artificial delivery, though performed before it is absolutely necessary, is not dangerous, if performed with care, we must be on our guard not to delay the delivery too long.

11. In some cases in which it might be thought eligible to deliver on account of the hemorrhage, the parts are so unyielding as not to allow of the operation itself without some hazard.

12. Yet when the parts requiring dilatation make no resistance to the passage of the hand, the event of the operation is always more precarious,

carious, the operation having been deferred too long.

13. But though it may be proper in some cases to determine on immediate delivery, the operation must always be performed with the utmost deliberation.

14. The first part of the operation has been described under preternatural presentations.

15. When the hand is carried to the *placenta* attached over the *os uteri*, it is of little consequence whether we perforate the *placenta* with our fingers, or separate it on one side till we come to the edge, though the latter is generally preferable.

16. If the hand be passed through the *placenta*, we shall come directly to the part of the child which presents.

17. But if we separate the *placenta* to the edge, the hand will be on the outside of the membranes, which must be ruptured before we lay hold of the feet of the child.

18. No regard is to be paid to the part of the

the child which may present, as it must always be delivered by the feet.

19. The feet of the child being brought slowly into the *pelvis*, we must wait till the *uterus* is contracted to the body of the child, which will be indicated by pain, and known by the application of our hand to the *abdomen.*

20. The delivery must then be finished very slowly, to give the *uterus* time to contract as the child is withdrawn from its cavity; but this part of the operation has likewise been described under preternatural presentations.

21. An assistant should make a moderate pressure upon the *abdomen* during the operation, to aid the contraction of the *uterus*, and to prevent ill consequences from the sudden emptying of the *abdomen.*

22. When the child is born, the hemorrhage will be generally stayed, if the operation has been performed slowly.

23. But if the hemorrhage should continue

or return, the *placenta* is to be managed as will be afterwards directed.

24. Should no uncommon difficulty attend the delivery, children will be often born living in cases of hemorrhage which are attended with the utmost danger to the mother; or, as it has sometimes happened, after the death of the mother.

25. Before, during, or after delivery in cases of hemorrhage, the means and applications before recommended, may be occasionally used with advantage.

SECTION VII.

On those Hemorrhages which are occasioned by the Separation of a Part, or of the whole Placenta, *before or in the Time of Labour.*

1. Hemorrhages arising from this cause are seldom so alarming or dangerous as the preceding.

2. But if the separation of the *placenta* be

sudden and extensive, the danger may be equal, and the same mode of proceeding required.

3. Our conduct must be guided by a consideration of the degree and effect of the hemorrhage, and of the state of the labour when it occurs.

4. Should the hemorrhage from this cause occur in the first period of labour, the action of the *uterus* will be weakened, but it may be sufficient to dilate the *os uteri*.

5. If the quantity of blood lost in these cases be very considerable when the *os uteri* is sufficiently dilated, the greater the degree the better, if the case will allow us to wait so long, the membranes containing the waters may be ruptured.

6. By the discharge of the waters the distention of the *uterus* will be lessened, and by the consequent contraction, the size of the vessels being diminished, the hemorrhage will of course be abated or removed.

7. After the abatement or suppression of the hemorrhage, the action of the *uterus* will

become stronger, so that the delivery will, in general, be then completed without further assistance.

8. But if the hemorrhage should continue after the discharge of the waters in such a degree as to threaten danger; or if it should commence in the second period of the labour, the interposition on our part must vary according to the circumstances, and chiefly according to the situation of the child.

9. It may in some cases be necessary to deliver by art as in the preceding section, and in others to deliver with the *forceps* or *vectis*, if the hemorrhage be profuse, and we despair of the child being expelled by the natural efforts.

10. The proper management of all such cases may be collected from what will be generally said on the subject, being always on our guard to distinguish between fear and real danger.

SECTION VIII.

On those Hemorrhages which occur when the Placenta *is retained after the Birth of the Child.*

1. The *placenta* is generally expelled by the spontaneous action of the *uterus* in a short time after the birth of the child.

2. But sometimes the *placenta* is retained, 1st, from the inaction or insufficient action of the *uterus*; 2d, by the irregular action of the *uterus*; 3d, by the scirrhous adhesion of the *placenta* to the *uterus*.

3. Sometimes there is a profuse discharge of blood, when no action is exerted by the *uterus* to expel the *placenta*, and this is found in practice to be far the most common cause of hemorrhage at the time of delivery.

4. Whenever there is a hemorrhage, the whole or a portion of the *placenta* must have been previously separated, and the hemorrhage usually continues, or returns till the *placenta* is expelled or extracted out of the cavity of the *uterus*.

SECTION IX.

On the Retention of the Placenta *from the Inaction or insufficient Action of the* Uterus.

1. Though the *placenta* be retained after the birth of the child, if there be no hemorrhage, we are to wait, without any interposition on our part, in expectation of the action of the *uterus.*

2. The time which it may be proper and expedient to wait, will depend upon the state of the patient, and the state of the patient generally depends upon the previous circumstances of the labour; so that it may not be proper to wait in one case for any length of time, and in another we may safely wait four, six, or even twelve hours.

3. But no patient ought to be left before the *placenta* is brought away, because though there may be no existing hemorrhage, a dangerous one may at any time come on.

4. When the patient complains of pain, the expulsion of the *placenta* may be safely forwarded, by aiding the contraction of the *uterus*

by

by moderate pressure with the hand upon the *abdomen*, and by pulling very gently by the *funis*.

5. But if the first pains, with the aid we think it prudent to give, should not bring down the *placenta*, we are to wait for a return of the pains, proceeding in the same cautious manner.

6. When that part of the *placenta* into which the *funis* is inserted can be felt, little danger or difficulty is to be apprehended; but we are either to wait longer, or to extract it very slowly.

7. But if a hemorrhage were to come on, the *placenta* being retained, it would be equally necessary to extract the *placenta* as it would be to extract the child, provided the degree of hemorrhage was equally profuse or sudden.

8. After the birth of the child, the extraction of the *placenta* is therefore to be considered as the only method by which an apprehended or present dangerous hemorrhage is to be prevented or avoided.

9. Yet all discharges of blood do not require

quire a speedy extraction of the *placenta*, but such only as by their violence or continuance, or frequent returns, threaten danger.

10. If much force be used in pulling by the *funis*, there will be danger; 1st, of tearing it from the *placenta*; 2d, of inverting the *uterus*; 3d, of injuring the *uterus* by the violence; 4th, of increasing the hemorrhage.

11. The danger of these consequences is greater when force is used to extract the *placenta* by the *funis*, than by the prudent introduction of the hand into the *uterus* for that purpose.

12. In cases in which the *uterus* acts insufficiently, by attending to the respiration you will sometimes be able to bring down the *placenta*, just using so much force, in pulling by the *funis*, as will prevent the retrocession of it in the act of inspiration.

13. But in whatever manner the *placenta* may be brought into the *pelvis*, it should be suffered to remain there till the action of the *uterus* comes on, or so long as there is reason to fear a return of the hemorrhage, and it must

must then be carefully withdrawn, or until it drop away.

SECTION X.

On the Retention of the Placenta *from the irregular Action of the* Uterus.

1. When all the parts of the *uterus* act with equivalent force, and at the same time, the combined power will contribute to the expulsion of whatever is contained in its cavity.

2. But if the *uterus* should act irregularly, the contrary effect might be produced.

3. If the *fundus uteri* should not act when the other parts are in action, the longitudinal contraction of the *uterus* would be produced; but if the central parts should only act, the *uterus* would then be contracted in the form of an hour-glass.

4. As the *placenta* cannot be excluded when the *uterus* acts in this irregular manner, it must be extracted by introducing the hand into the *uterus*, provided the state of the hemorrhage should

should require it; and when it cannot be extracted by using the means before mentioned.

5. The hand ought never to be introduced into the *uterus* except in cases of real necessity, and then with the utmost circumspection and care; and the hand when introduced should not be withdrawn until the *placenta* is detached and brought into the *pelvis*.

6. If the whole *placenta* be loosened, this is easily effected; but if a portion of it should be found adhering, this must be separated by bending it back from the *uterus*, or by passing gently the fingers between it and the *uterus*.

7. When the *uterus* is found contracted in the form of an hour-glass, and this is the most common cause of the retention of the *placenta*, the contracted part must be dilated in the manner recommended for the dilatation of the *os uteri*, and it must be amply dilated, or it will immediately contract again round the wrist.

8. We must then proceed as is before advised.

SECTION

SECTION XI.

On the Retention of the Placenta *from the scirrhous Adhesion of it to the* Uterus.

1. Should there be a degree of hemorrhage sufficient to make it necessary to introduce the hand to extract the *placenta*, a part of it must be separated, though there may be a scirrhous adhesion of the remainder to the *uterus.*

2. Then the method advised in the last section must be put in practice, and the firmer we find the adhesion, the slower the separation ought to be made.

3. But if there should be no hemorrhage of importance, and merely a retention of the *placenta* beyond its due time, we may say, for example, more than four hours, and the means before recommended are insufficient to bring down the *placenta* ;

4. It may then be necessary to introduce the hand carefully to separate and extract the *placenta,*

placenta, and the difficulty will not be increased by the delay.

5. Following the navel string as our guide, we must then pass the hand to the *placenta*; and if it should be found almost wholly adhering, we must begin with great caution to separate at the edge, and gradually proceed as before directed until the separation is completed.

6. Then grasping the *placenta*, we must slowly withdraw our hand, that the *uterus* may contract accordingly, and the chance of a subsequent hemorrhage be prevented.

7. The irritation made by the introduction of the hand, will often occasion a return of the action of the *uterus*, before dormant, that will greatly facilitate the separation.

8. Yet it is possible that a portion of the *placenta* may adhere so firmly as to make it unsafe to separate it with our fingers.

9. Should this circumstance occur notwithstanding the most deliberate and firm proceeding, it may sometimes be more justifiable to leave the adhering part remaining, than to use violence in separating it.

10. But

10. But though hemorrhages are stayed when the greater portion of *placenta* is brought away, it is always a desirable thing to bring away the *placenta* and membranes in a perfect state; and if these are slowly extracted, any *coagula* formed in the *uterus* will usually be enveloped in them.

SECTION XII.

On those Hemorrhages which follow the Expulsion or Extraction of the Placenta.

1. The hemorrhage in these cases may be either a continuation of that which existed before the exclusion of the *placenta*, or it may only follow the exclusion of the *placenta*.

2. When it is of the former kind, we may presume that it was not within our power to prevent it; but the latter kind may often be attributed to the violence or hurry with which the *placenta* has been extracted.

3. This is not so dangerous as either of

the varieties of hemorrhage of which we have last spoken, though with imprudent management, or under particular circumstances, it has sometimes proved fatal.

4. All the cautions given with respect to the general management of the *placenta*, relate to the prevention of this kind of hemorrhage.

5. When the strength of women is much reduced by any cause which existed previous to labour, or when they have gone through much fatigue in the course of it, there is usually great heat and a rapid circulation of the blood at the time of delivery.

6. While they are in this situation, if the *placenta* were to be brought away hastily, an extraordinary quantity of blood must of necessity be discharged.

7. The interval of time which passeth between the birth of the child and the expulsion of the *placenta*, should therefore be employed in cooling the patient, and recovering her from her fatigue.

8. Even when the *placenta* is excluded out

of the cavity of the *uterus*, it should be suffered to remain till all tumult is quieted, and then, with the membranes, slowly extracted.

9. The quantity of blood discharged in consequence of the separation of the *placenta* will vary in different women, or in the same women at different labours, independently of the manner in which the *placenta* may come away.

10. The less the quantity of blood discharged, the better women in general recover, provided there be no morbid cause of its diminution.

11. Some women are always prone to a great discharge of blood after the separation of the *placenta*, whatever care may be taken in extracting it.

12. This may often be prevented by keeping the patient out of bed till the membranes are broken and the waters discharged to the very moment of the child being born, rather retarding than forwarding its expulsion.

13. In all cases of dangerous hemorrhage, after the extraction of the *placenta*, it is first

necessary that we should be assured, by an examination *per vaginam*, that the *uterus* is not inverted.

14. Should there be an alarming hemorrhage after the separation and exclusion of the *placenta*, notwithstanding all the care which can be taken according to the methods before mentioned,

15. The doctrine of hemorrhages before given, and the general treatment already recommended, will enable you to fix upon the line of conduct it will be expedient to pursue, and to restrain or suppress them as far as they are under the influence of art.

16. In cases of hemorrhage so very profuse as to occasion frightful faintings, continuing so long as to raise great solicitude for the immediate safety of the patient, it was generally said, that cordials ought not to be given.

17. But this requires explanation. When the patient has continued faint so long as to give time, according to our judgement, for the vessels of the *uterus* to contract, then cordials and

ON LABOURS

ATTENDED WITH CONVULSIONS.

1. The convulsions which occur in pregnancy very much resemble the epilepsy; but to the symptoms, which these have in common, may be added, the peculiar hisping noise which women almost universally make with their lips during the convulsions.

2. When convulsions happen to women with child, they are generally, but not constantly, accompanied or followed with symptoms of labour; but though the convulsions may be removed, the child is most frequently afterwards born dead.

3. These convulsions are indicated by a piercing pain in the head, by giddiness and other vertiginous complaints, by blindness, by vacillation of the mind or a slight delirium, by violent cramp or pain at the stomach, by a fulness or apparent strangulation of the neck and *fauces*, and other affections of the vascular and nervous system.

4. The

and nourishment in small quantities, very often repeated, are really needful.

18. Other means are also to be used for the purpose of recovering women from this long continued fainting; and one of the most effectual is, sprinkling the face freely with cold water.

19. After a profuse hemorrhage, the patient will frequently have a disposition to sleep, which has generally been considered as dangerous.

20. But short sleeps are very refreshing; though long ones, in a very weak state, are, under every circumstance, found to be injurious.

21. When there has been a dangerous hemorrhage, the patient should remain for many hours undisturbed, and in an horizontal position; and our attention must be continued as long as any danger is to be apprehended.

4. The means to be used for the prevention or cure of convulsions when threatened or existing, must be regulated according to the constitution of the patient and the violence of the symptoms.

5. It will always be necessary to take away some blood, and commonly to repeat the bleeding; and it has been found particularly serviceable to open the jugular vein; or to take away blood by cupping; and by applying leeches to the temples. Emetics, when they could be given, have been useful, as has sometimes also the warm bath. Clysters may be frequently exhibited. Opiates, joined with nervous medicines, may be given; and the patient is, by all the means in our power, to be soothed and restrained from violent exertions.

6. During the convulsions, the means by which contrary irritations may be excited are to be used; and of these the most powerful is, the dashing of cold water in the face, which has been known to prevent, or even to cure, convulsions.

7. Some writers have recommended the speedy

speedy delivery of the patient, as the most eligible, and only effectual method of removing puerperal convulsions; but others have insisted that the labour should be uninterrupted.

8. From the histories of all the cases of puerperal convulsions which have been hitherto recorded, it appears, that a greater number have died of those who were delivered by art, than when the labours were resigned to nature.

9. As far as my experience enables me to judge, we ought not to attempt to deliver women with convulsions before some progress is made in the labour.

10. But when the *os uteri* becomes dilated sufficiently, or to a certain degree, the patient safely may, and ought to be delivered by art, if from the urgency of the convulsions, and the general danger of the case, delivery should appear necessary.

11. The manner of delivering women in these cases, whether the operation be performed with the *forceps* or *vectis*, or by turning and extracting the child by the feet, has already been fully explained.

12. The

12. The event of the operation, both to the mother and child, will also very much depend upon the skill and circumspection with which it may be performed.

13. When dangerous convulsions come on in the early part of pregnancy, it is often clear that they arise from excessive uterine irritation.

14. It will then be justifiable and proper to forward the exclusion of the *fœtus*, by puncturing the membranes as soon as it can be done with safety.

THE END.

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